

What is claimed is:

1. Polyethylene having:

5 a weight average molecular weight in the range of 150,000-1,000,000 g/mol;

10 a number average molecular weight of at least 25,000 g/mol;

15 a polydispersity in the range of 1.3-10; and

20 a wear coefficient of less than  $3.2 \cdot 10^{-4} \text{ mm}^3/\text{mN}$ .

2. The polyethylene of claim 1, wherein said polyethylene has a wear coefficient below  $2.9 \cdot 10^{-4} \text{ mm}^3/\text{mN}$ .

3. Polyethylene having:

15 a melt viscosity of less than  $10^6 \text{ Pa.s}$ ; and

20 a wear coefficient below  $2.4 \cdot 10^{-4} \text{ mm}^3/\text{mN}$ .

4. The polyethylene according to any one of claims 1-3, wherein said polyethylene has a weight average molecular weight below 700,000.

5. The polyethylene according to any one of claims 1-3, wherein said polyethylene has a weight average molecular weight below 500,000.

6. The polyethylene according to any one of claims 1-5, wherein said polyethylene has a weight average molecular weight of at least 250,000.

Sub A1

*Sub A*

7. The polyethylene of according to any one of claims 1-6, wherein said polyethylene has a co-monomer content of less than 10 mol%.

8. The polyethylene according to any one of claims 1-7, wherein said polyethylene has a co-monomer content in the range of 0.5-5 wt%.

5 9. The polyethylene according to any one of claims 1-8, wherein said polyethylene has a wear coefficient below  $2.0 \cdot 10^{-4} \text{ mm}^3/\text{mN}$ .

10 10. The polyethylene according to any one of claims 1-9, wherein said polyethylene has a polydispersity below 5.

11. The polyethylene according to any one of claims 1-9, wherein said polyethylene has a polydispersity in the range of 2-4.

15 12. The polyethylene according to any one of claims 1-11, wherein said polyethylene has a melting point of at least 100° C.

13. The polyethylene according to any one of claims 1-11, wherein said 20 polyethylene has a melt viscosity of less than  $5 \cdot 10^5 \text{ Pa.s}$ .

14. The polyethylene according to any one of claims 1-13, wherein said polyethylene has a number average molecular weight of at least 100,000 g/mol.

*Sub A1  
cont.*

15. A process comprising melt-processing the polyethylene according to any one of claims 1-14.

*C*

16. The process of claim 15, wherein said process includes injection molding said polyethylene.

*Sub A2*

17. An article obtainable by the process according to any one of claims 15-16.

18. An article comprising the polyethylene according to any one of claims 1-14.

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*10*

19. Use of the polyethylene according to any one of claims 1-14.

*C*

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*15*

20. A sliding member comprising a polyethylene, said polyethylene having:  
a weight average molecular weight below 1,000,000 g/mol; and  
a wear coefficient of less than  $3.2 \times 10^{-4} \text{ mm}^3/\text{mN}$ .

*Add A3*